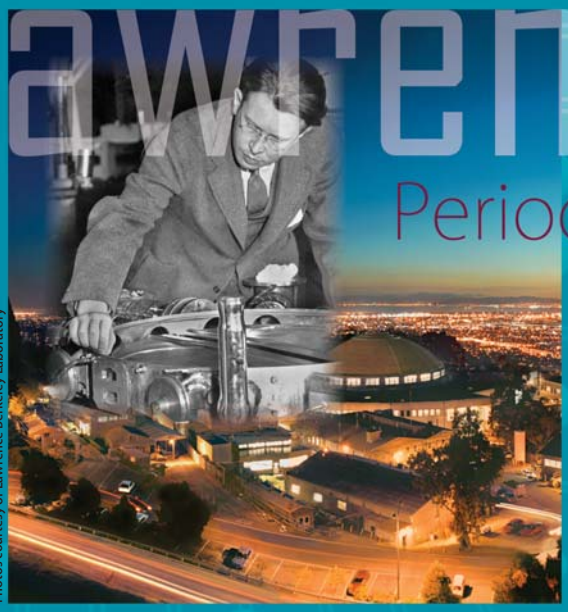
lawrencium

Periodic Element 103



Photos courtesy of Lawrence Berkeley Laboratory

Ernest O. Lawrence

Ernest O. Lawrence (1901-1958), was an American physicist most commonly known for his invention of the cyclotron. He has an element in the periodic table named in his honor. The idea behind Lawrence's cyclotron was to produce high energy particles needed for atomic disintegration by using a series of small "pushes." Lawrence found a way to produce these particles without using high voltage. After applying 2,000 volts of electricity to the cyclotron, Lawrence produced 80,000-volt spinning particles.

In 1939, Lawrence received the Nobel Prize for his work on the cyclotron. During his career Lawrence started the Radiation Laboratory in Berkeley, California. His laboratory was one of the main locations used for atomic research during World War II. Lawrence also believed in government sponsorship of major scientific programs, and campaigned for this government support.

Lawrencium, formerly known as Unniltrium, is number 103 on the periodic table and has an atomic mass of 262 g/mol. Lawrencium's chemical symbol is Lr, but up until 1963 its symbol was Lw. Lawrencium is presumed to be a solid in its natural state, and is included in the actinides chemical series on the periodic table.

Lawrencium was discovered in 1961 by a team at Lawrence's Radiation Laboratory (now called Lawrence Berkeley National Laboratory). The element was formed by combining a three milligram target of three isotopes of californium with boron-10 and B-11 ions in the Heavy Ion Linear Accelerator. The resulting nuclei was then electrically charged and added to an atmosphere of helium, which were amassed onto a thin copper tape. The resulting isotope was $^{257}_{103}Lr$, which came to be the first evidence of the element now known as Lawrencium.

Physics: In early 2003, researchers at DOE's Lawrence Berkeley National Laboratory reported they had produced the first Bose Einstein condensate in which of the following states:

W) Solid
X) Liquid
Y) Gas
Z) Plasma

Answer: W) Solid

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
July 2007 S M T W Th F S: 1 2 3 4 5 6 7 / 8 9 10 11 12 13 14 / 15 16 17 18 19 20 21 / 22 23 24 25 26 27 28 / 29 30 31	September 2007 S M T W Th F S: 1 / 2 3 4 5 6 7 8 / 9 10 11 12 13 14 15 / 16 17 18 19 20 21 22 / 23 24 25 26 27 28 29 / 30		1	2	3	4
5 Friendship Day	6	7	8 Ernest O. Lawrence's Birthday	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

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